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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/761,329

01/22/2004

Norihiro Sakaguchi

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
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EXAMINER

EGAN, SCOTT T

ART UNIT

PAPER NUMBER

2622

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

03/26/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/26/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/761,329

Applicant(s)

SAKAGUCHI, NORIHIRO

Examiner

Scott Egan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on April 22, 2004 was considered by the examiner.

Specification

3. The disclosure is objected to because of the following informalities:

On page 1, lines 14-17 should be edited to be more understandable.

On page 1, line 18 an -a- should be inserted between such and case.

On page 7, line 8 should be changed to be more understandable, for example "B exist in every respective field, both the luminance signal and the color signal can be played".

On page 7, lines 21-25 should be edited to be more understandable.

On page 9, line 10 should be changed to conform with the rest of the disclosure in that (S7/NO) corresponds to when the object it -not- moving.

On pages 12-13, lines 27 through 1-3 should be edited to be more understandable.

Appropriate correction is required.

Claim Objections

4. Claims 1-3 are objected to because of the following informalities:

Consider claim 1, page 14, line 14 "which are in" should be changed to -which are the-. Line 17 "determined to be less" should be change to -determined to be small-.

Consider claim 2, page 15, line 1 "which are in" should be changed to -which are the-. Line 7 "determined to be less" should be change to -determined to be small-.

Consider claim 3, page 15, line 19 "determined to be less" should be change to -determined to be small-.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai (US 2003/0030737) in view of Kahn (US 6,532,264).

Consider **claim 1**, Yanai explicitly teaches:

An imaging apparatus (image pickup device, figure 3), comprising:

a color image pick-up device (image pickup element, 7, figure 3) constituting an image in one frame by a plurality of fields (fields are described in paragraphs [0057-0059]) for imaging an image of an object and having an output capable of carrying out a playback of an image in each of said fields (image display system, 11, figure 3);

a driving circuit for driving the color image pick-up device (drive circuit, 8, figure 3);

a timing generating circuit for generating a drive timing of said color image pick-up device (sync control circuit, 14, controls the entirety of the image pickup apparatus, paragraph [0052]); and

a signal processing device for processing an output signal of said color image pick-up device (signal processing circuit, 9, figure 3),

wherein pixels which are the same color in each of said fields are added when a luminance of said image of the object is determined to be low (paragraphs [0063-0064] teach the third mode which is used if the luminance is determined to be low and adds fields).

However, Yanai does not explicitly teach determining if the difference of the luminance between adjacent fields is small.

In the same field of endeavor, Kahn teaches a way to detect motion vectors in video images. Kahn further discloses intraframe correlation, which is the correlation of two fields one of which is even lines and the other of which is odd lines. This results in a motion vector and a confidence metric, which is either a 0 or a 1, 1 being a difference and 0 being no difference (column 10 lines 26-67 through column 11 lines 1-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the intraframe correlation, used to determine if there is motion in the image found in Kahn into the image pickup device found in Yanai in order to ensure that the image will be stabilized when the fields are added.

Consider **claim 2**, Yanai explicitly teaches:

An imaging apparatus (image pickup device, figure 3), comprising:
a color image pick-up device (image pickup element, 7, figure 3) constituting an image in one frame by a plurality of fields (fields are described in paragraphs [0057-0059]) for imaging an image of an object and having an output capable of carrying out a playback of an image in each of said fields (image display system, 11, figure 3);
a driving circuit for driving the color image pick-up device (drive circuit, 8, figure 3);
a timing generating circuit for generating a drive timing of said color image pick-up device (sync control circuit, 14, controls the entirety of the image pickup apparatus, paragraph [0052]); and
a signal processing device for processing an output signal of said color image pick-up device (signal processing circuit, 9, figure 3),

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wherein pixels which are in same color in each of said fields are added after re-exposing a next field which is next of adjacent fields of said color image pick-up device when a luminance of said image of the object is determined to be low (paragraphs [0063-0064], lines 1-6 and lines 1-8 respectively, teach the third mode which is used if the luminance is determined to be low and adds fields).

However, Yanai does not explicitly teach determining if the difference of the luminance between adjacent fields is small.

In the same field of endeavor, Kahn teaches a way to detect motion vectors in video images. Kahn further discloses intraframe correlation, which is the correlation of two fields one of which is even lines and the other of which is odd lines. This results in a motion vector and a confidence metric, which is either a 0 or a 1, 1 being a difference and 0 being no difference (column 10 lines 26-67 through column 11 lines 1-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the intraframe correlation, used to determine if there is motion in the image found in Kahn into the image pickup device found in Yanai in order to ensure that the image will be stabilized when the fields are added.

Consider **claim 4**, the combination of Yanai in view of Kahn, as applied to claim 2 above further teaches:

The imaging apparatus according to claim 1, wherein said color image pick-up device is operated only when a size of a file which can be played in one field is selected (Kahn describes how his system only operates on a field of interest, which is interpreted as a file size that fits in a field, column 11, lines 14-26).

Consider **claim 5**, Yanai further teaches:

The imaging apparatus according to claim 1, further comprising a device for selecting whether or not to add pixels at a time of low luminance which is capable of selecting whether or not to add the pixels which are in the same color in each of said fields (paragraphs [0063-0064] teach the third mode which is used if the luminance is determined to be low and adds fields, the device used is the level detection circuit 12, figure 3).

8. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai in view of Kahn as applied to claim 2 above, and further in view of Tanaka et al. (US 6,130,420).

Consider **claim 3**, the combination of Yanai in view of Kahn explicitly teaches the image apparatus of claim 2 as well as wherein the pixels which are in the same color in each of said fields are added after re-exposing the next field which is the next of the adjacent fields of said color image pick-up device when the luminance of said image of the object is determined to be low (paragraphs [0063-0064] teach the third mode which is used if the luminance is determined to be low and adds fields, Yanai) and when the difference of the luminance between the outputted images which are in said adjacent fields of said color image pick-up device is determined to be less from the result of comparing said outputted images (column 10 lines 26-67 through column 11 lines 1-26, Kahn).

However, the combination does not explicitly teach the use of a variable clock generator, which lowers the speed of the clock frequency.

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In the same field of endeavor, Tanaka et al. teach a solid state image sensing apparatus in figure 7. Tanaka et al. further disclose a timing generator 21 inside of the timing generating circuit 20, which reduces the drive frequency in a particular mode of the camera (column 6, lines 33-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the timing generator found in Tanaka et al. into the image pickup device found in the combination of Yanai in view of Kahn in order to consume less power (column 6 lines 47-48, Tanaka et al.).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maeda (US 2003/0202108) discloses an image pick-up apparatus including a CCD, CCD drive, timing generator, signal processor, brightness detecting portion, which determines the mode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Egan whose telephone number is (571) 270-1452. The examiner can normally be reached on Monday-Friday 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SE


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER